ACCESSION NR: AP5

AUTHOR: Vlasenko, N. A.; Yaremko, A. M.

TITLE: On the mechanism of excitation of electroluminescence in ZnS-Mn films

SOURCE: Optika i spektroskopiya, v. 18, no. 3, 1965, 467-473

TOPIC TAGS: electroluminescence, electroluminescence excitation, zinc sulfide optical material, thin film, excitation possibility, breakdown voltage

ABSTRACT: The influence of the thickness of a sample on the probability of excitation of electroluminescence in ZnS-Mn films was investigated with an aim at determining unambiguously the electroluminescence excitation mechanism. It is shown that such an experiment makes it possible to determine uniquely whether the impact mechanism is responsible for the excitation of the electroluminescence. To obtain samples of different thickness with reproducible properties, the two-step method of electroluminescent film deposition, developed earlier by one of the authors (Vlasenko, with Yu. A. Popkov, Opt. i spektr. v. 8, 81, 1960), was employed. The films ranged in thickness from 0.04 to 2.0 μ, and the Mn concentration was ~ 0.5 wt.%. The electroluminescence was excited with a 2000 cps field to permit applica-

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ACCESSION NR: AP5006435

tion of a higher voltage than in the case of a dc field. The average brightness of the electroluminescence excited by the alternating field was determined by the amplitude of the voltage. [illegible] the excitation probability for a given field [illegible] anism of excitation of electroluminescence [illegible] the relation of the cases from the point of view of [illegible] impact ionization mechanisms. It is [illegible] critical increase that the mean free path of the [illegible] It is also known that electric breakdown in CdS-Mn is the result of formation of electronic cascades due to impact ionization of the main [illegible] injected from the electrodes and accelerated by the field. "The authors thank M. P. Lisitsa for interest in the work, and Yu. I. Gorkun, M. V. Fok, and I. K. Vrakhnin for participating in discussions." Orig. art. has: 4 figures, 9 formulas, and 1 table.

ASSOCIATION: None

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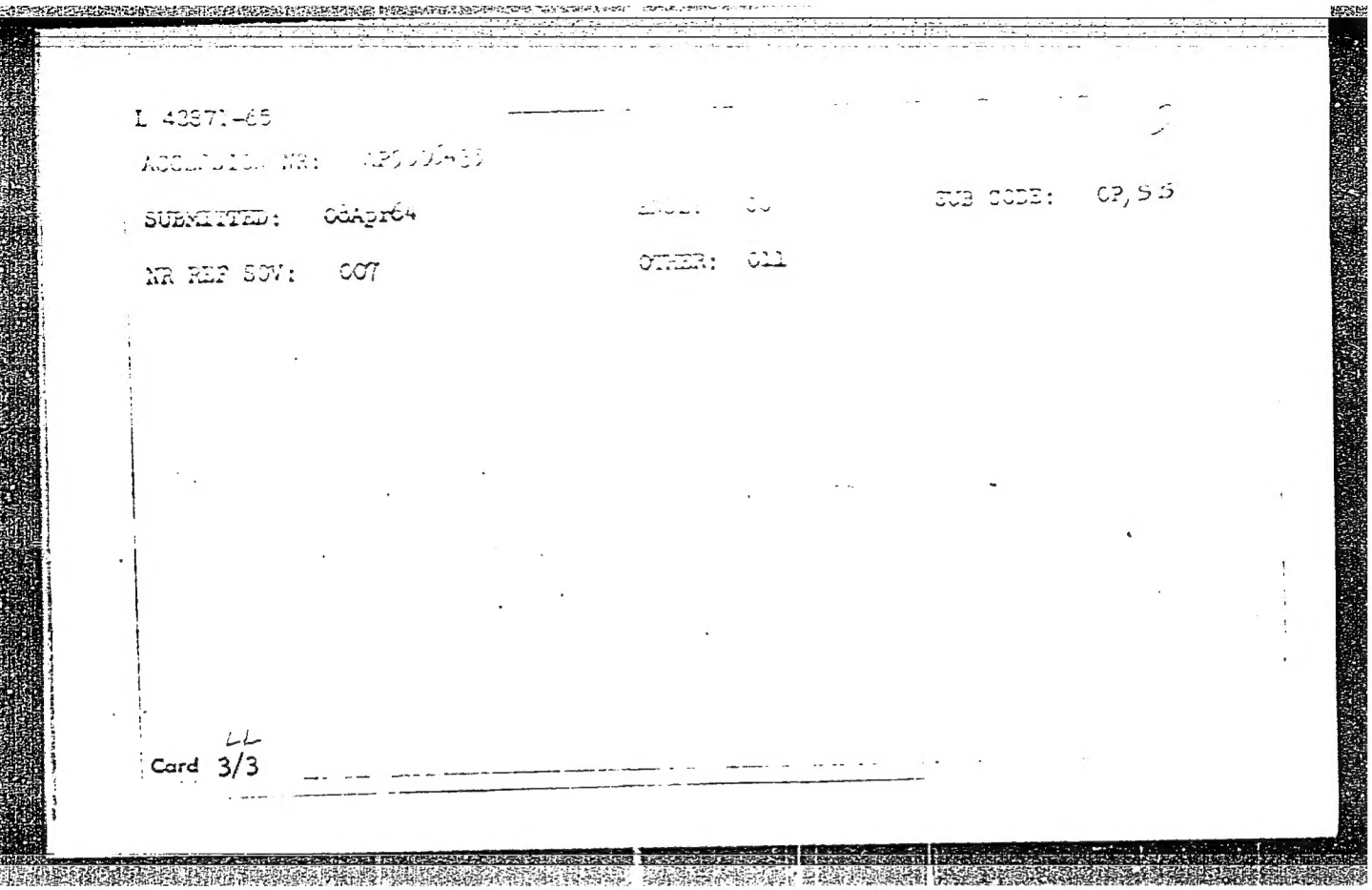

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ACCESSION NR: AP5006435

SUBMITTED: 08Apr64 ENCL: 00 SUB CODE: CP,SS

NR REF SOV: 007 OTHER: 011

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VLASENKO, N. A., Cand Phys-Math Sci -- (diss) "Photo- and electroluminescence of the sublimate-phosphor ZnS-Mn." Khar'kov, 1960. 16 pp; (Ministry of Higher and Secondary Specialist Education Ukrainian SSR, Khar'kov Order of Labor Red Banner State Univ im A. M. Gor'kiy); 150 copies; free; bibliography at end of text (10 entries); (KL, 25-60, 126)

VLASENKO, N.A.; POPKOV, Yu.A.

Investigating the electroluminescence of a ZnS-Mn sublimate phosphor. Opt.i spektr. 8 no.1:81-88 Ja '60. (MIRA 13:7)
(Luminescence) (Zinc sulfide)

VLASENKO, N. A.

51-5-16/26

AUTHORS: Sinel'nikov, K.D., Shklyarevskiy, I.N. and Vlasenko, N.A.

TITLE: Double Refraction of Fluoride Films. (Dvoynoye Lucheprelomleniye plenok ftoridov)

PERIODICAL: Optika i Spektroskopiya,1957, Vol.2, Nr 5, pp.651-657 (USSR)

ABSTRACT: Studies of films obtained by vacuum deposition show that they consist of microcrystallites separated by pores. Both the form and the orientation of these microcrystallites depend on the nature of the substance, thickness of the film and the conditions at deposition (speed of evaporation, pressure in the vacuum system, temperature and nature of the base, direction of the evaporated beam). It is known that a substance consisting of correctly oriented isotropic particles of a refractive index μ_1 and with the pores filled by a medium with a refractive index μ_2 is anisotropic if at least one of the particle dimensions and the distances between them is small compared with the wavelength of light. Double refraction produced in such circumstances is called the double refraction of form. The optical properties of such a body are determined by the refractive indices of its component parts and by the relative volumes of these parts.

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51-5-16/26

Double refraction of fluoride films.

The absolute size of the particles, so long as it is smaller than light wavelength, is not important. For many substances the dimensions of microcrystallites and the distances between them are considerably smaller than visible light wavelength, and therefore in that region one would expect anisotropy of the film. Double refraction was, in fact, found by the authors in films of CaF_2, BaF_2, LiF, PbS, V_2O_5 and other substances obtained by deposition on a glass base in vacuum. On introducing such a film between two crossed nicols one can observe fairly strong transmission in the field of vision. This transmission is at maximum when the glass with film on it is so oriented that the direction given by the cross section of the plane of the base with the plane of incidence of the evaporated molecular beam is at an angle of 45° to the direction of polarisation of the nicols. Wetting of the film by liquids of various refractive indices decreases the intensity of the transmitted light. The transmission becomes zero on wetting with a liquid whose refractive index is equal to the refractive index μ_1 of the bulk substance. Double refraction of the fluoride films may be also studied by an interferometric method. On a glass plate a semi-transparent silver layer is

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symmetrical hill is deposited which is then covered by another semitransparent silver layer. In monochromatic light a system of double rings is observed (Fig.2). The equal chromatic order lines are split in a similar way. (Fig.3). The results show that the fluoride layers possess biaxial double refraction and that the plane of the optical axes coincides with the plane of incidence of the molecular beam. The orientation of the refractive index ellipsoid relative to the layer of the film depends on the angle of incidence of the molecular beams on to the base in the process of the deposition of the film. The magnitude of the double refraction also depends on this angle of incidence. The results are shown in Figs.6 - 10. There are 10 figures, and 11 references, of which 8 are Slavic.

ASSOCIATION: Kharkov State University (Khar'kovskiy Gosudarstvennyy Universitet)

SUBMITTED: October 15, 1956.

AVAILABLE: Library of Congress

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ACCESSION NR: AP4020933 S/0051/64/016/002/0297/0303

AUTHOR: Vlasenko, N.A.; Lisitsa, M.P.

TITLE: Optical constants of photosensitive lead sulfide layers

SOURCE: Optika i spektroskopiya, v.16, n0.2, 1964, 297-303

TOPIC TAGS: optical constant, reflection, transmittance, transmission, absorption, absorption coefficient, index of refraction, lead sulfide, lead sulfide coating, exciton absorption

ABSTRACT: In view of the potential value of PbS films and coatings, prepared by chemical procedures, for detection of infrared radiation, there were measured the optical constants of such layers in the approximate range from 0.4 to 5.5 μ. A further purpose of the work was to elucidate the nature of the long wavelength plateau adjacent to the fundamental absorption edge. The thickness d of the layers were determined to within 1% by an interferometric method. The transmittance T was measured by means of SF-4 spectrophotometer in the 0.4 to 1.2 μ interval and by means of IKS infrared spectrometer in the 1 to 5.5 μ range. The reflection coefficients R from the layer side and R' from the substrate side were determined by comparison of

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the reflection from the specimen with the reflection from a standard mirror with a known R; a UM-2 monochromator with an AgS photocell was used for the visible region measurements; an IKS-6 spectrophotometer for the measurements in the infrared. The values of the absorption coefficient k and the index of refraction n were calculated on the basis of the measured values of T, R, R' and d by means of formulas adduced in the paper. The inferred values are presented in the form of curves and a table for n, and compared with the corresponding constants for PbS single crystals, taken from the literature. In the 1 to 4 μ region the index of refraction changes little, but remains consistently below the value for single crystals. In the wavelength region below 3 μ the absorption spectrum of the films agrees with the absorption spectrum of single crystals, but in the longer wavelength region exhibits additional absorption that depends to some extent on the size of the crystallites. This additional absorption is tentatively attributed to the presence in layer crystals of a high concentration of structure defects, for this absorption tends to decrease with increasing crystallite size. The nature of the absorption plateau is discussed and the absorption in this region is associated with an exciton mechanism. "The authors are sincerely grateful to V.Ye.Lashkarev for his interest in the work and discussion of the results, and to P.P.Pogoretskiy and I.M.Khalimonova for

ACCESSION NR: AP4020933

assistance in carrying out the measurements." Orig.art.has: 7 formulas, 4 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 29Apr63 DATE ACQ: 02Apr64 ENCL: 00

SUB CODE: PH NR REF SOV: 005 OTHER: 008

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VLASENKO, N.A.; LISITSA, M.P.

Optical constants of photosensitive films of lead sulfide. Opt. i spektr. 16 no.2:297-303 F '64. (MIRA 17:4)

VLASENKO, N.A.; ROMANENKO, V.F.

Electroluminescence of CdS single crystals. Opt. i spektr. 16 no. 4:642-650 Ap '64. (MIRA 17:5)

VLASENKO, N.A.; MILOSLAVSKIY, V.K.; SHKLYAREVSKIY, I.N.

On the appearance of Brewster bands and superposition bands.
Opt.i spektr. 13 no.2:250-255 Ag '62. (MIRA 15:11)
(Spectrum analysis)

VLASENKO, N.A.

Effect of temperature on the electroluminescence of the ZnS-Mn phosphor sublimate. Opt. i spektr. 8 no.3:414-417 Mr '60. (MIRA 14:5)

(Zinc sulfide) (Luminescence)

69842
S/051/60/008/03/028/038
E201/E191

24.3500

AUTHOR: Vlasenko, N.A.

TITLE: The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 3, pp 414-417 (USSR)

ABSTRACT: The reported temperature dependences of electroluminescence (Refs 1-7) are contradictory and, therefore, the author undertook an investigation of the effect of temperature on the properties of electroluminescent phosphors with the purest possible chemical composition. For this purpose the author prepared ZnS-Mn in sublimated form and studied its properties in the region 100 - 500 °K. Below room temperature measurements were carried out in a special optical cryostat. By using a heater in this cryostat the temperature in it could be raised to 70 °C. For measurements above room temperature the samples were placed on a solid copper block in a special oven. Temperature was measured with a copper-constantan thermocouple. A photomultiplier FEU-17 was used as a receiver. It was connected to an amplifier and a galvanometer.

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The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

Electroluminescence was excited with sinusoidal voltages and photoluminescence was excited with the mercury line at 365 mμ. The luminescence intensity above room temperature was measured under steady-state conditions and below room temperature it was measured while the sample was slowly heated (1.5 deg/min). The author recorded also the electroluminescence spectra at various temperatures. From these measurements he constructed the temperature dependence of the relative number of quanta emitted per unit time under given conditions of excitation. Such temperature dependences were constructed for photo-luminescence (curve 4 in Fig 1) and for electroluminescence excited with 200 kV/cm at 200 c/s (curve 2 in Fig 1) and 2000 c/s (curve 3 in Fig 1). These curves show that up to about 200 °K the number of quanta emitted per unit time (N/N_o) in photo- and electroluminescence remains constant and at higher temperatures (up to about 250 °K) the value of N/N_o falls slightly. Above 250 °K the photo- and electroluminescence curves diverge completely; the value

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The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

of N/N_o for electroluminescence rises sharply with temperature, while N/N_o for photoluminescence falls rapidly. The rise of electroluminescence is accompanied by a rise of current through the sample. It was also found that an increase of temperature alters the intensities of photoluminescence and electroluminescence and bands are broadened (this broadening is proportional to $\sqrt{T}$ at $T > 250$ °K). The integral luminance of electroluminescence (curve 5 in Fig 1) behaves similarly to the value of N/N_o for electroluminescence, i.e. it also rises strongly with temperature above 300 °K. The curve showing thermal de-excitation (1 in Fig 1) has one maximum in the region 130 °K which is due to excess atoms of zinc. No thermal de-excitation (thermoluminescence) was observed if the sample was not subjected to ultraviolet excitation before heating. No resemblance was found between the thermoluminescence curve and the temperature dependence of electroluminescence (cf. curves 1, 2 and 3 in Fig 1). It follows that the traps responsible for the thermoluminescence peak at 130 °K do not play any role in the

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The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

process of electroluminescence between 100 and 500 °K. From the logarithmic dependence of the electrical conductivity on the reciprocal of the absolute temperature (curve 1 in Fig 2) the author deduced that there are two types of donor levels in the phosphor, whose depths are 0.11 and 0.38 eV. The observed temperature dependence of electroluminescence can be explained on the basis of the collision mechanism of excitation and thermal ionization of donors which occurs more easily in the presence of a field. At low temperatures the conduction electron density is governed mainly by the shallow donor levels. In strong external fields (~100 kV/cm) these levels are completely ionized even at low temperatures, i.e. the number of electrons which can be accelerated by the external field and can thus excite the activator centres by collisions is independent of temperature and consequently electroluminescence is also independent of temperature. When temperature rises so that ionization of deep donor levels becomes possible, the intensity of electroluminescence increases with temperature because of the increase in the

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The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

number of collisions which excite the activator centres (curve 2 in Fig 2). The author investigated also the frequency dependence of the electroluminescent intensity at various temperatures (curves 1-4 in Fig 3 show this dependence at 105, 293, 360 and 410 °K respectively). On increase of the frequency a noticeable rise of the electroluminescent intensity occurs at higher temperatures (curves 2 and 3 in Fig 1) because the number of donor centres ionized in one half-period of the applied voltage decreases on increase of the field frequency. For the same reason the frequency dependence of the electroluminescent intensity is altered on increase of temperature (Fig 3); this occurs when the probability of ionization of deep donor levels, made easier by the applied field, rises with temperature.

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Acknowledgements are made to K.D. Sinel'nikov, I.N. Shklyarevskiy and V.K. Miloslavskiy for their advice.

There are 3 figures and 9 references, of which 3 are Soviet, 4 English, 1 French and 1 German.

SUBMITTED: August 17, 1959

AUTHOR: Vlasenko, N.

TITLE: Investigation of the Fundamental Absorption Spectrum of Zinc Sulphide

PERIODICAL: Optika i spektroskopiya, 1959, Vol 7, Nr 4, pp 511-517 (USSR)

ABSTRACT: The author investigated the fundamental absorption spectrum (in the spectral region 220-600 mμ) of zinc sulphide films produced by vacuum deposition at 5 x 10^{-5} mm Hg. Glass and quartz plates were used as the substrates. Zinc sulphide was heated in vacuo before evaporation in order to remove possible chloride and sulphate impurities. The rate of deposition of the film was varied from 200 to 2000 Å/min. To avoid the effects of interference in the region of weak absorption ($\lambda > 335$ mμ, the author used a method described earlier (Ref 13). In the region of strong absorption ($\lambda < 335$ mμ) the absorption coefficient was determined in the usual way by comparing transmission of two samples of different known thicknesses. These thicknesses were such that transmission did not exceed 10-20%; under these conditions the error due to disregard of interference was small (3-5%). Transmission was measured by means of an SF-4 spectrophotometer. The thickness of the films was determined interferometrically to within 1-2%. The errors in

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Investigation of the Fundamental Absorption Spectrum of Zinc Sulphide

determining the absorption coefficient varied from 2 to 5%. Strong absorption ($\sim 10^4 cm^{-1}$) was observed at wavelengths below 365 mμ. A weak maximum ($\sim 10^5 cm^{-1}$) was observed at 325 mμ and with further decrease of wavelength absorption rose to $7 \times 10^5 cm^{-1}$ (at 220 mμ). An absorption "tail" extended into the visible region ($\sim$500 mμ) where the absorption coefficient amounted to 100 cm^{-1}. All this is shown in Fig 1. Heating (annealing) of zinc sulphide films in vacuo or in sulphur vapour at temperatures above 400°C affected strongly the long-wavelength ($\lambda > 330$ mμ) part of absorption. Absorption of annealed films at $\lambda > 330$ mμ was much smaller than that of non-annealed films, approaching the values observed in absorption by massive ZnS crystals. Annealing produced also a small rise in absorption at 270-330 mμ (Fig 2). The author recorded also the absorption spectra of non-annealed (Fig 3) and annealed (Fig 4) ZnS films at -155° (curves 1), +17° (curves 2) and +240°C (curves 3). At $\lambda < 280$ mμ the spectra were found to be displaced towards longer wavelengths on increase of temperature and the temperature coefficient of displacement was -2.2×10^{-4} eV/deg C. When temperature was lowered the absorption maximum (325 mμ) moved towards shorter wavelengths, became sharper and higher (Fig 4, curve 1). The temperature coefficient of displacement of the long wavelength absorption edge (at 340 mμ) in annealed samples

Investigation of the Fundamental Absorption Spectrum of Zinc Sulphide

was -4.4×10^{-4}eV/deg C. Fig 5 shows the wavelength dependence of the difference between the absorption coefficients of non-annealed and annealed films. This dependence has a maximum which rises in value, becomes sharper and is displaced towards shorter wavelengths on lowering of temperature. Absorption by zinc sulphide at $\lambda <$ 270 mμ is independent of the method of preparation of the sample and is due to transitions from the valence band to the conduction band. The experimental data show that the absorption coefficient in the region 230-270 mμ is proportional to $(E - E_G)^{1.5}$, where E is the energy of the absorbed photon and E_G is the forbidden energy gap. At $\lambda >$ 270 mμ this dependence of the absorption coefficient on $(E - E_G)$ is no longer valid because of the presence of the absorption band at 325 mμ which is not resolved at room temperature. This band represents formation of the first excited state of the lattice by transition of electrons from negative ions to the nearest positive ions. The long-wavelength absorption observed in as-prepared films and absent in annealed films, as well as in large crystals, is due to lattice defects such as

Investigation of the Fundamental Absorption Spectrum of Zinc Sulphide

dislocations or grain boundaries. It is possible that this absorption is related to localization of the excited state of the lattice at the lattice defects. Acknowledgments are made to K.D. Sinel'nikov, I.N. Shklyarevskiy and V.K. Miloslavskiy for their advice. There are 6 figures, 1 table and 23 references, 5 of which are Soviet, 13 English, 1 Dutch, 2 German and 2 translations from English into Russian.

SUBMITTED: January 19, 1959

VLASENKO, N.A.; MILOSLAVSKIY, V.K.; SHKLYAREVSKIY, I.N.

Interference of luminescent radiation from sublimate phosphors. Opt. i spektr. 11 no.3:403-409 S '61. (MIRA 14:9)
(Phosphors) (Luminescence)

68206

SOV/58-59-5-11644

24.3200

Translation from: Referativnyy Zhurnal Fizika, 1959, Nr 5, pp 246 - 247 (USSR)

AUTHOR: Vlasenko, N.A.

TITLE: New Method for Measuring the Absoprtion Coefficient of Substances in Thin Films

PERIODICAL: Uch. zap. Khar'kovsk. un-t, 1958, Vol 98, Tr. Fiz. otd. fiz.-matem. fak., Vol 7, pp 321 - 323

ABSTRACT: A method lacking the distortions due to interference phenomena is proposed for measuring the light absorption coefficient of a substance in thin films. For this purpose a light beam, which has been linearly polarized in the incidence plane, is aimed at the thin film of a substance under the Brewster angle. In this case the reflection coefficient is equal to zero, and multiple reflections leading to the arousal of interference distortions do not take place. The absorption coefficient in this case is calculated from the formula:

$$K = \frac{\ln I_2/I_1}{(t_1-t_2)/\cos r},$$

where I_1 and I_2 are the intensities of the light passing through a

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New Method for Measuring the Absorption Coefficient of Substances in Thin Films

plate having the thicknesses t_1 and t_2, and r is the Brewster angle. Using an SF-4 spectrophotometer, the author verified the method experimentally on ZnS films 3,500 and 1,100 Å thick in the case of wavelengths ranging from 3,300 to 5,000 Å. This method may find an application in the investigation of the absorption of light by sublimated phosphors.

K.S. Vul'fson

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68314

SOV/51-8-1-14/40

24,3500

AUTHORS: Vlasenko, N.A. and Popkov, Yu.A.

TITLE: Investigation of Electroluminescence of the Sublimated ZnS-Mn Phosphor

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 1, pp 81-88 (USSR)

ABSTRACT: The authors used Vlasenko's method (Ref 4) to prepare ZnS-Mn phosphors. Pure zinc sulphide and metallic manganese were evaporated in 10^{-5} mm Hg vacuum from tantalum boats onto a glass plate coated with tin dioxide (the latter served as the transparent electrode). The phosphor layers obtained in this way were heat-treated at 500-550°C in order to diffuse the activator into ZnS and to produce good crystal structure in the films. On top of the phosphor layer aluminium was deposited to serve as the second electrode. In some samples a dielectric layer (for example polystyrene) was deposited between the phosphor and the aluminium electrode. ZnS-Mn phosphors prepared in this way had orange luminescence when excited with electron beams, X-rays, ultraviolet light or by means of alternating electric fields. The present paper deals with electroluminescence of sublimated ZnS-Mn films excited from an audio-frequency oscillator ZG-10. The authors investigated the electroluminescence spectrum, luminance waves, dependence of the integral luminance on the intensity and frequency of the applied

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Investigation of Electroluminescence of the Sublimated ZnS-Mn Phosphor

field and certain electrical properties. The electroluminescence spectrum was a simple band of 0.20 eV half-width and a maximum at 2.13 eV (582 mμ); it was practically independent of the intensity and frequency of the applied field. Luminance waves were found to become more asymmetric with increase of the applied field frequency (Fig 1). The luminance wave peaks rose by 2-3 orders of magnitude with increase of the applied field intensity from 3.4×10^5 to 5.0×10^5 V/cm (Fig 3). The ratio of negative to positive luminance peaks (peaks during negative and positive half-periods of the applied field) was also strongly affected by the field; at $E = 2 \times 10^5$ V/cm this ratio was 4.5 and it fell to below 1 at $E = 5.6 \times 10^5$ V/cm (Fig 2). The integral electroluminescence luminance depended on the Mn concentration; at the optimum concentration (0.003 g/g) it was 0.02 stilb for samples 3 μ thick in a 4×10^5 V/cm and 3000 c/s field. The integral luminance rose by 6-8 orders of magnitude when the field intensity increased by a factor of 5-6 (Fig 4); this rise is much greater than in powder phosphors. At a given field intensity the luminance rose also with thickness of the samples. The luminance was proportional to the applied field frequency at low frequencies but above 5000 c/s it reached saturation; the luminescence was independent

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Investigation of Electroluminescence of the Sublimated ZnS-Mn Phosphor

of the frequency, provided the resistance of the transparent electrode was small compared with the impedance of the sample. At high applied field intensities the authors observed non-linear effects in the current-voltage characteristics of the phosphor (Fig 5); deviations from Ohm's law were found in fields greater than 3×10^4 V/cm (Fig 6). When the upper electrode was in immediate contact with the phosphor (i.e. no intermediate dielectric layer) slight rectification was observed at that electrode. At low temperatures (115-250°K) the functions $\log \sigma = f(1/T)$, where σ is the electrical conductivity and T is the absolute temperature, are straight lines whose slopes depend somewhat on the intensity of the applied field (Fig 7). Above 250°K (1/T = 0.004) a sharper rise of the electrical conductivity with temperature was observed. The results obtained show that electroluminescence of sublimated ZnS-Mn phosphors is intrinsic luminescence and it is produced throughout the sample. The authors found also shallow (~0.1 eV) donor levels in ZnS-Mn layers. The ionization energy of these donors depends on the applied field in agreement with Frenkel's theory of thermal ionization aided by electric fields. Acknowledgments are

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68314

Investigation of Electroluminescence of the Sublimated ZnS-Mn Phosphor SOV/51-8-1-14/40

made to K.D. Sinel'nikov who suggested the subject and to I.N. Shklyarevskiy and V.K. Miloslavskiy for their advice. There are 9 figures and 11 references, 3 of which are Soviet, 6 English, 1 translation from English into Russian and 1 Dutch.

SUBMITTED: June 15, 1959

Card 4/4

42192
S/051/62/013/004/006/023
E039/E491

24350

AUTHORS: Vlasenko, N.A., Pavlova, Ye.N.

TITLE: On the role of additional impurities in the formation of luminescence centres in the phosphor ZnS-Cu

PERIODICAL: Optika i spektroskopiya, v.13, no.4, 1962, 550-553

TEXT: Samples of ZnS with various levels of impurities were prepared by evaporation in vacuo as described in an earlier paper. In order to facilitate diffusion and recrystallization, the condensed samples were heated to 550°C while still under vacuum. It is shown that the absence of luminescence in the case of ZnS-Cu without an additional co-activator is associated with the deposition of the copper in the form of colloidal particles. The effect of two types of additional impurity is studied: 1) impurities which compensate the surplus charge arising from the substitution of Zn^{2+} by ions of Cu^{+} (e.g. Cl); 2) impurities which have the same valency as the ions in the basic lattice (e.g. Mn). The addition of small quantities of Mn to ZnS-Cu stimulates the green Cu luminescence together with the orange Mn luminescence. The most intense green band is obtained for a Mn concentration of $\leq 10^{-5}$ g/g eq. and the

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intensity of both bands falls sharply when the Cu concentration $\geq 10^{-3}$ g/g eq. A comparison of the green band phosphor ZnS-Cu,Mn and ZnS-Cu,Cl with the blue band phosphor ZnS-Ag,Mn and ZnS-Ag,Cl shows that the additional impurity does not form a constituent part of the luminescence centres but only assists in the introduction of the activator creating the centres. There are 3 figures.

SUBMITTED: August 15, 1961

VLASENKO, N.A.

Influence of the temperature on the photoluminescence of ZnS-Mn phosphor sublimate. Opt. i spektr. 8 no.6:847-854 Je '60.
(MIRA 13:8)

(Zinc sulfide) (Luminescence)

SHKLYAREVSKIY, I.N.; VLASENKO, N.A.; MILOSLAVSKIY, V.K.; NOSULENKO, N.A.

Value and sign of the phase difference $\Delta = \delta_p - \delta_s$. Opt. i spektr. 9 no.5:640-643 N '60. (MIRA 13:11)

(Reflection (Optics)) (Metals--Optical properties)

69842
S/051/60/008/03/028/038
E201/E191

24.3500

AUTHOR: Vlasenko, N.A.

TITLE: The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 3, pp 414-417 (USSR)

ABSTRACT: The reported temperature dependences of electroluminescence (Refs 1-7) are contradictory and, therefore, the author undertook an investigation of the effect of temperature on the properties of electroluminescent phosphors with the purest possible chemical composition. For this purpose the author prepared ZnS-Mn in sublimated form and studied its properties in the region 100 - 500 °K. Below room temperature measurements were carried out in a special optical cryostat. By using a heater in this cryostat the temperature in it could be raised to 70 °C. For measurements above room temperature the samples were placed on a solid copper block in a special oven. Temperature was measured with a copper-constantan thermocouple. A photomultiplier FEU-17 was used as a receiver. It was connected to an amplifier and a galvanometer.

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S/051/60/008/03/028/038
E201/E191

The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

Electroluminescence was excited with sinusoidal voltages and photoluminescence was excited with the mercury line at 365 mμ. The luminescence intensity above room temperature was measured under steady-state conditions and below room temperature it was measured while the sample was slowly heated (1.5 deg/min). The author recorded also the electroluminescence spectra at various temperatures. From these measurements he constructed the temperature dependence of the relative number of quanta emitted per unit time under given conditions of excitation. Such temperature dependences were constructed for photo-luminescence (curve 4 in Fig 1) and for electroluminescence excited with 200 kV/cm at 200 c/s (curve 2 in Fig 1) and 2000 c/s (curve 3 in Fig 1). These curves show that up to about 200 °K the number of quanta emitted per unit time (N/N_o) in photo- and electroluminescence remains constant and at higher temperatures (up to about 250 °K) the value of N/N_o falls slightly. Above 250 °K the photo- and electroluminescence curves diverge completely; the value

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S/051/60/008/03/028/038
E201/E191

The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

of N/N_0 for electroluminescence rises sharply with temperature, while N/N_0 for photoluminescence falls rapidly. The rise of electroluminescence is accompanied by a rise of current through the sample. It was also found that an increase of temperature alters the intensities of photoluminescence and electroluminescence and bands are broadened (this broadening is proportional to $\sqrt{T}$ at $T > 250$ °K). The integral luminance of electroluminescence (curve 5 in Fig 1) behaves similarly to the value of N/N_0 for electroluminescence, i.e. it also rises strongly with temperature above 300 °K. The curve showing thermal de-excitation (1 in Fig 1) has one maximum in the region 130 °K which is due to excess atoms of zinc. No thermal de-excitation (thermoluminescence) was observed if the sample was not subjected to ultraviolet excitation before heating. No resemblance was found between the thermoluminescence curve and the temperature dependence of electroluminescence (cf. curves 1, 2 and 3 in Fig 1). It follows that the traps responsible for the thermoluminescence peak at 130 °K do not play any role in the

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S/051/60/008/03/028/038
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The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

process of electroluminescence between 100 and 500 °K. From the logarithmic dependence of the electrical conductivity on the reciprocal of the absolute temperature (curve 1 in Fig 2) the author deduced that there are two types of donor levels in the phosphor, whose depths are 0.11 and 0.38 eV. The observed temperature dependence of electroluminescence can be explained on the basis of the collision mechanism of excitation and thermal ionization of donors which occurs more easily in the presence of a field. At low temperatures the conduction electron density is governed mainly by the shallow donor levels. In strong external fields (~100 kV/cm) these levels are completely ionized even at low temperatures, i.e. the number of electrons which can be accelerated by the external field and can thus excite the activator centres by collisions is independent of temperature and consequently electroluminescence is also independent of temperature. When temperature rises so that ionization of deep donor levels becomes possible, the intensity of electroluminescence increases with temperature because of the increase in the

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The Effect of Temperature on Electroluminescence of a Sublimated Phosphor ZnS-Mn

number of collisions which excite the activator centres (curve 2 in Fig 2). The author investigated also the frequency dependence of the electroluminescent intensity at various temperatures (curves 1-4 in Fig 3 show this dependence at 105, 293, 360 and 410 °K respectively). On increase of the frequency a noticeable rise of the electroluminescent intensity occurs at higher temperatures (curves 2 and 3 in Fig 1) because the number of donor centres ionized in one half-period of the applied voltage decreases on increase of the field frequency. For the same reason the frequency dependence of the electroluminescent intensity is altered on increase of temperature (Fig 3); this occurs when the probability of ionization of deep donor levels, made easier by the applied field, rises with temperature.

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Acknowledgements are made to K.D. Sinel'nikov, I.N. Shklyarevskiy and V.K. Miloslavskiy for their advice.

There are 3 figures and 9 references, of which 3 are Soviet, 4 English, 1 French and 1 German.

SUBMITTED: August 17, 1959

39869

S/051/62/013/002/008/014
E032/E514

24.3300

AUTHORS: Vlasenko, N.A., Miloslavskiy, V.K. and Shklyarevskiy, I.N.

TITLE: On the origin of Brewster and super-position fringes

PERIODICAL: Optika i spektroskopiya, v.13, no.2, 1962, 250-255

TEXT: The conditions necessary for the appearance of Brewster fringes in white light and super-position fringes in monochromatic light are discussed in the general case with allowance for multiple reflections within each plate. The two types of fringes are carefully defined and the differences between them are brought out. In each case an explicit relation is given for the ntensity distribution. In the case of Brewster fringes, the orresponding intensity-distribution formula is used to establish a condition for the continuity of the achromatic fringe. In fact the achromatic fringe is continuous (visual observation) provided $t\Delta\nu > 2.5$, where t is the plate thickness and $\Delta\nu$ is the wave number difference corresponding to the spectral range employed. The final section is concerned with the analysis of Brewster fringes which are produced when a two-beam interferometer, e.g. the Jamin interferometer, is crossed with a silvered plane-

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On the origin of Brewster and ... S/051/62/013/002/008/014
E032/E514

parallel plate. Analysis of the corresponding intensity distribution shows the presence of several achromatic fringes and it is suggested that these fringes may be useful in speeding up the adjustment of two-beam interferometers. They may also be useful in rapid order counting and the measurement of the thickness of plane-parallel layers. There are 5 figures.

SUBMITTED: July 17, 1961

Card 2/2

S/051/60/008/06/016/024
E201/E691

24.3500

AUTHOR: Vlasenko, N.A.

TITLE: The Effect of Temperature on Photoluminescence of the Sublimated Phosphor ZnS-Mn

PERIODICAL: Optika i spektroskopiya, 1960, Vol 8, Nr 6, pp 847-854 (USSR)

ABSTRACT: The effect of temperature on the absorption (Fig 1) and luminescence spectra (Figs 2, 3) of the sublimated phosphor ZnS-Mn was investigated between 100 and 550°K and the temperature dependence of the relative quantum yield of luminescence was obtained for samples with amounts of Mn from 0.05 to 5% (Figs 4, 5). The results obtained were used to deduce the mechanism of excitation of luminescence centres, the nature of luminescent and radiationless transitions and kinetics of concentration quenching. Acknowledgments are made to K.D. Sinel'nikov, I.N. Shklyarevskiy and V.K. Miloslavskiy for their advice. There are 5 figures and 18 references, 4 of which are Soviet, 8 English, 2 Dutch, 1 German, 2 mixed (Dutch, German and English) and 1 translation from English into Russian.

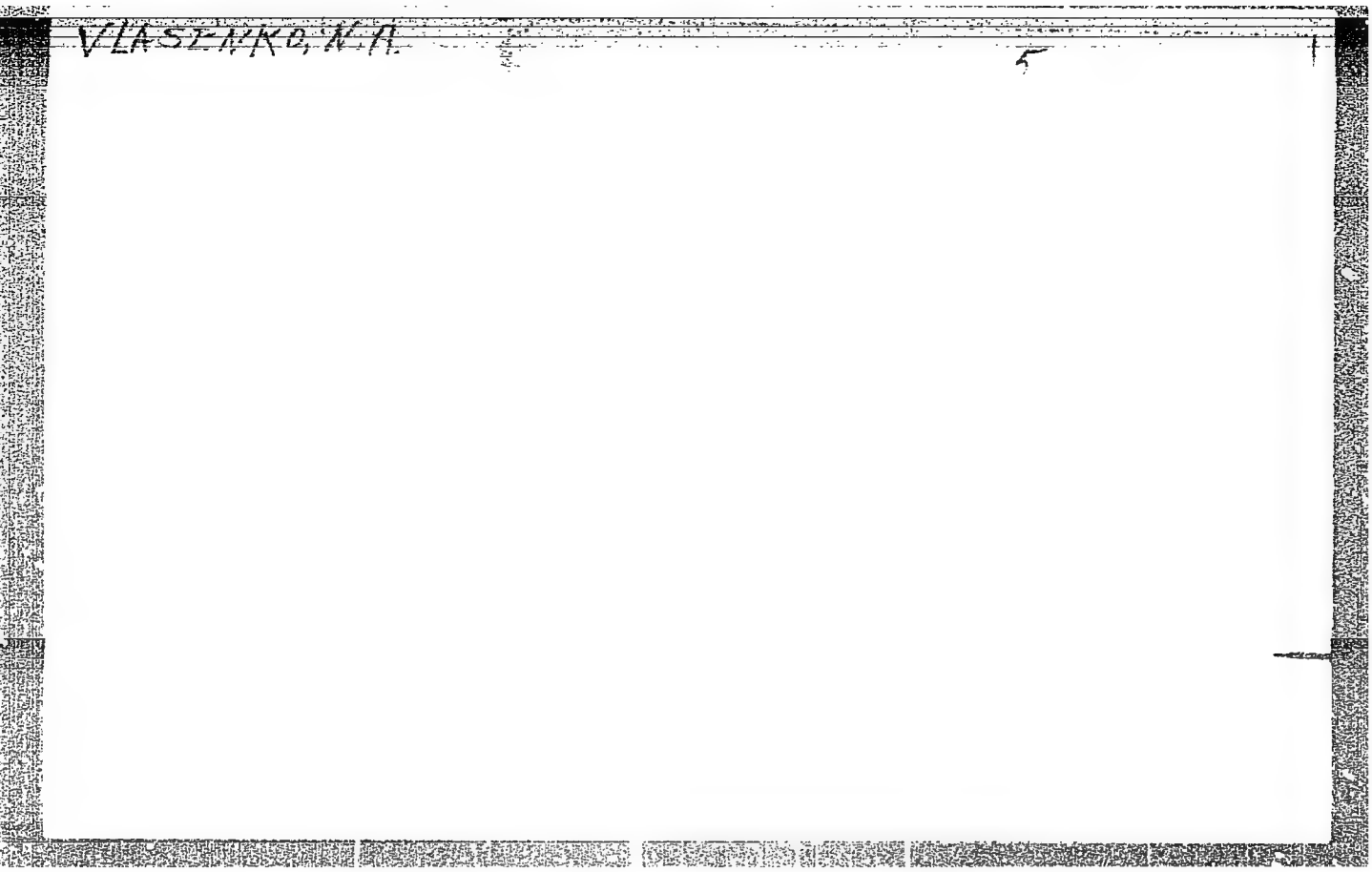
Card 1/1

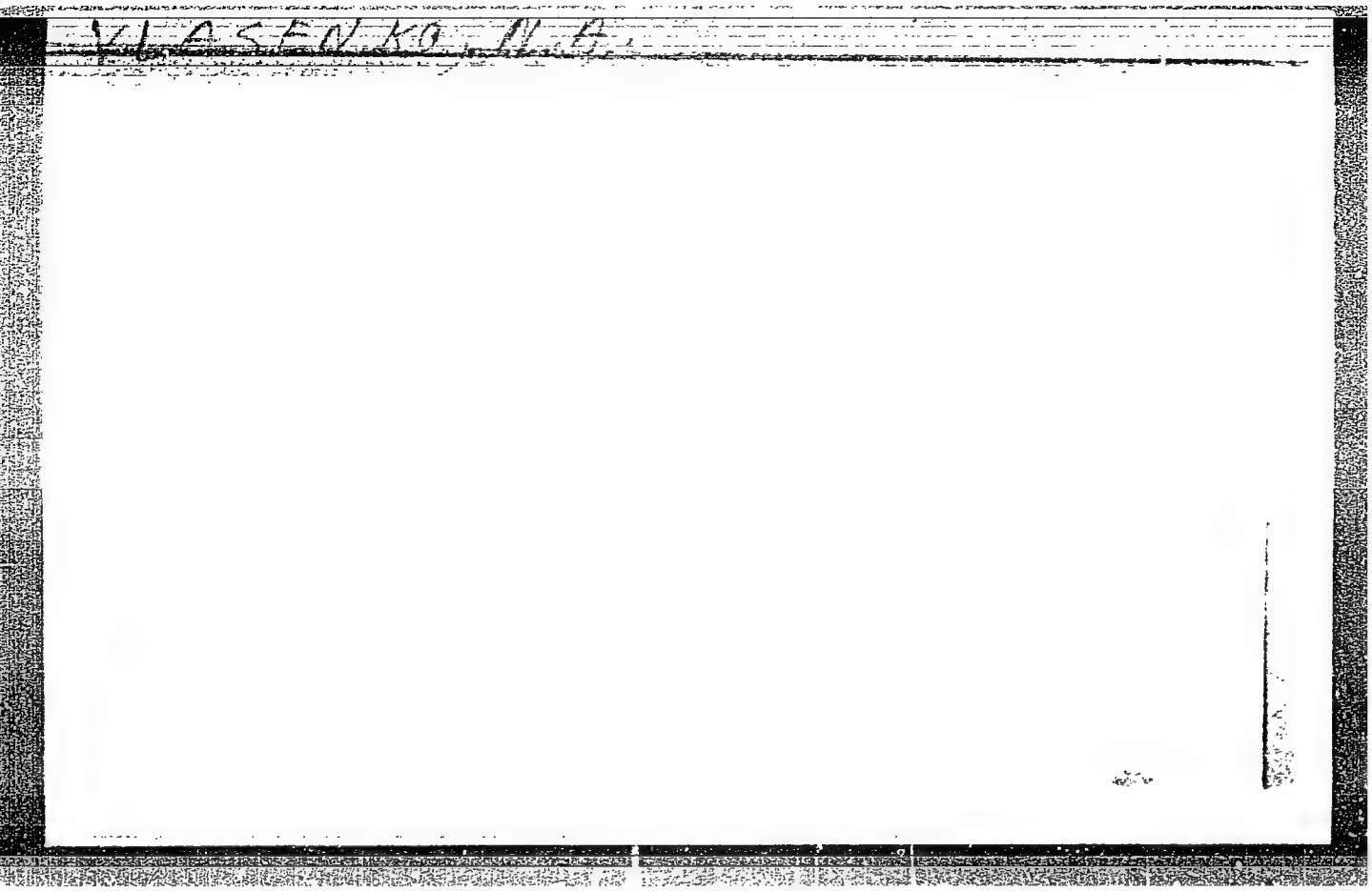
SUBMITTED: October 19, 1959

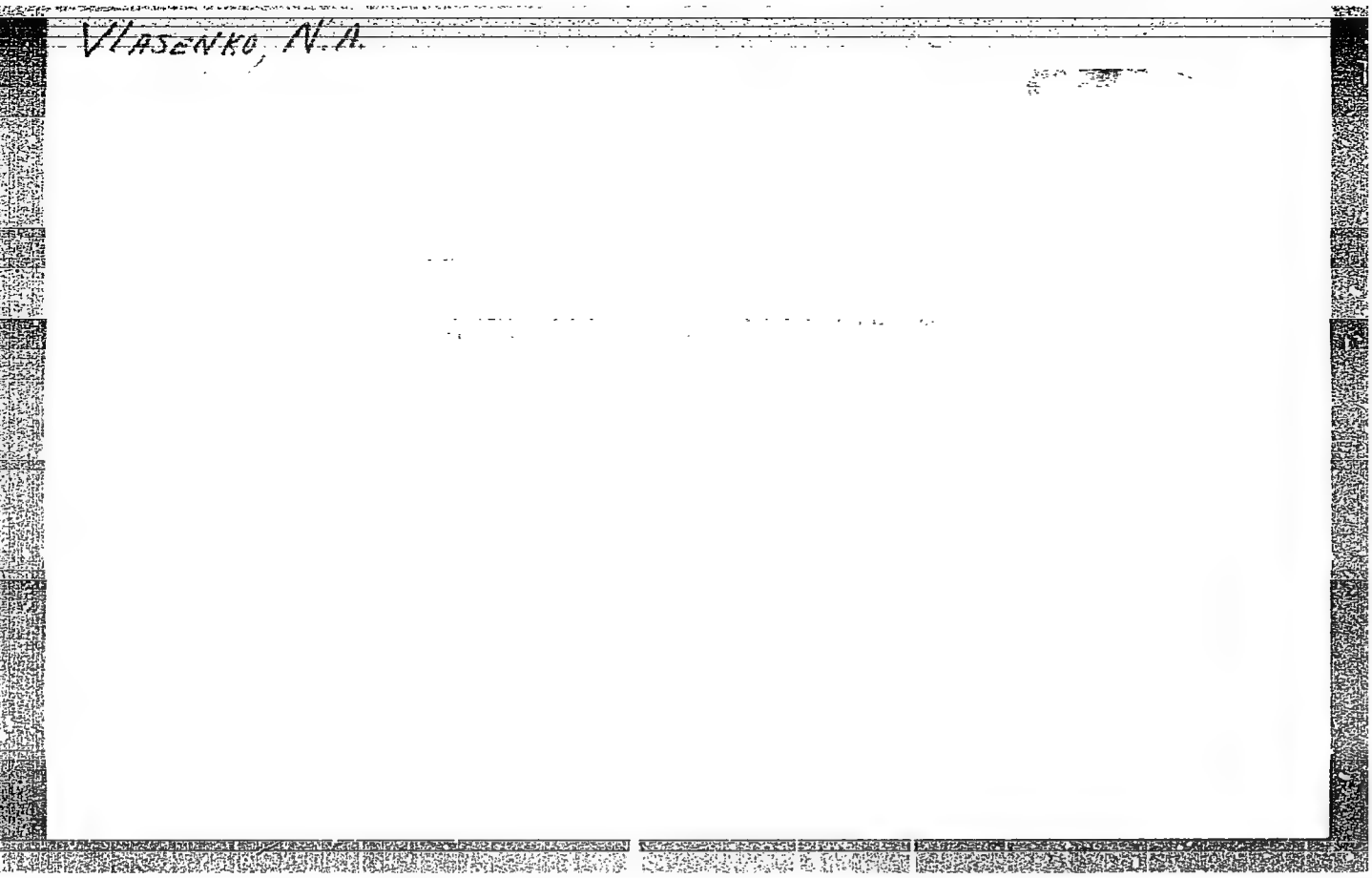
SINEL'NIKOV, K.D.; SHKLYAREVSKIY, I.N.; VLASENKO, N.A.

Complex interference light filters with improved characteristics.
Opt. i spektr. 2 no.4:534-536 Ap '57. (MLRA 10:6)

1. Khar'kovskiy gosudarstvennyy universitet.
(Light filters) (Interference (Light))







SINEL'NIKOV, K.D.; SHKLYAREVSKOY, I.N.; VLASENKO, N.A.

Optical characteristics of complex interference light filters.
Zhur.tekh. fiz. 26 no.1:96-101 Ja '56. (MLRA 9:6)
(Light filters)

VLASENKO, N.A.; PAVLOVA, Ye.N.

Role of additives in the formation of luminescence centers in ZnS-Cu phosphor. Opt. i spektr. 13 no.4:550-553 O '62. (MIRA 16:3)

(Phosphors)

ACC NR: AP7004961 SOURCE CODE: UR/0048/66/030/009/1427/1429

AUTHOR: Vlasenko,N.A.; Vitrikhovskiy,N.I.; Denisova,Z.L.; Pavlenko,V.F.

ORG: none

TITLE: On the nature of the luminescence centers in cadmium sulfide /Report,Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no. 9, 1966, 1427-1429

TOPIC TAGS: luminescence, cadmium sulfide, luminescence center, annealing, lattice defect

ABSTRACT: The authors investigated the influence of heat treatment in vacuum and in sulfur vapor, cadmium vapor, oxygen, and hydrogen sulfide and the presence of Group I and Group III dopants on the red, orange, and green luminescence of cadmium sulfide crystals and films in order to determine the nature of the corresponding luminescence centers. The crystals were grown from the gaseous phase by sublimation and synthesis, and the polycrystalline films were deposited in vacuum. The green luminescence centers were found to be thermally labile and it was not possible to produce them by any heat treatment. These centers were more stable in a sulfur atmosphere than in the other atmospheres; it is concluded that they are associated with local sulfur excesses in the lattice arising during crystal growth. Group III dopants increased the intensity

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ACC NR: AP7004961

of the green luminescence and Group I dopants reduced it. The activation energy for thermal quenching of the green luminescence was found to be 0.14 ± 0.01 eV, in agreement with the difference between the width of the forbidden band and the energy of the emitted photons. The orange luminescence was enhanced by anneal in an oxygen atmosphere and depressed by anneal in other atmospheres. From this and the findings of B.A.Kulp (Phys. Rev., 125, 1865 (1962)) concerning the effects of electron bombardment it is tentatively concluded that oxygen favors the formation of interstitial cationic defects in the form of singly charged interstitial cadmium ions, which are responsible for the orange luminescence. The red luminescence was found to be enhanced by heating in vacuum or in a cadmium atmosphere and by the presence of Group I dopants; from these results and from other data in the literature it is concluded that the red luminescence is due to recombination of an electron with a hole trapped at a sulfur vacancy. Orig. art. has: 1 figure.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 000 OTH REF: 008

Card 2/2

ACC NR: AP7004974 SOURCE CODE: UR/0048/66/030/009/1463/1466

AUTHOR: Vlasenko, N.A.; Zyn'o,S.A.

ORG: none

TITLE: Polarization effects in electroluminescent ZnS:Mn films /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v.30, no.9, 1966, 1463-1466

TOPIC TAGS: electroluminescence, zinc sulfide, manganese, electric polarization, LUMINOPHOR

ABSTRACT: The authors have investigated polarization effects in 0.25 micron thick films of a ZnS:Mn electroluminophor between SnO_2 and Al electrodes. The metallic electrode was separated from the luminophor by a 100-150 Å thick layer of SiO. It was found that when a steady voltage is applied to such a cell it becomes polarized and the luminescence intensity rapidly drops by a factor of about 100. The polarized condition persisted for several hours when the cell was short circuited, but the cell could be restored to the unpolarized condition by irradiation with photons having energies between 1.6 and 3 eV. When to a polarized cell there was applied a voltage of the same sign as the polarizing voltage there resulted only weak luminescence, but when a voltage of the opposite sign was applied, the initial luminescence flash was brighter than that from an unpolarized cell. The luminescence intensity (both of the initial flash and in the steady state) was higher when the aluminum electrode was the

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ACC NR: AP7004974

anode when it was the cathode, and the duration of the polarizing and depolarizing processes also depended somewhat on the polarity. The presence of moisture reduced the polarization and accelerated the depolarizing process. It is hypothesized that the polarization is due to accumulation of free carriers at the luminophor-electrode boundary as a result of entrapment of electrons in deep traps. The ratio of the polarization field to the polarizing field was evaluated as the ratio $(V_2 - V_1)/V_2$, where V_1 is the initial polarizing voltage and V_2 is the voltage of the same sign that must be applied to the polarized cell to produce an initial flash of the same intensity as the flash produced by application of V_1 to the unpolarized cell. This ratio was found to be about 0.35 and to vary little with the magnitude and sign of the polarizing voltage. The polarization effects provide a simple explanation for a number of experimental facts, including: 1) the low brightness achieved by application of successive pulses of the same sign; 2) the strong influence of a test pulse of opposite sign on the brightness produced by the following ten to twenty exciting pulses; 3) the differences in the slopes of the voltage-brightness characteristics for different types of excitation; and 4) the transition phenomena that occur when successive pulses of alternating sign are applied to the unexcited phosphor. Orig. art. has: 1 formula, 2 figures and 1 table.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 002 OTH REF: 001

Card 2/2

ACC NR: AP7004975 SOURCE CODE: UR/0048/66/030/009/1467/1469

AUTHOR: Vlasenko,N.A.; Syn'o,S.A.

ORG: none

TITLE: Investigation of the characteristics of low-voltage electroluminescent ZnS:Mn films under pulse excitation /Report, Fourteenth All-Union Conference on Luminescence (Crystal Phosphors) held at Riga, 16-23 Sept. 1965/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 30, no.9, 1966, 1467-1469

TOPIC TAGS: electroluminescence, zinc sulfide, manganese, time constant, pulse rate, optic brightness

ABSTRACT: The authors have investigated the pulsed characteristics of thin electroluminescent ZnS:Mn films produced by the two-stage technique of N.A.Vlasenko and Yu.A.Popkov (Optika i spektroskopiya, 8, 81 (1960)) in order to assess the technical possibilities of these low-voltage electroluminophors. It was found that on application of a 0.1 to 1.0 millisec square pulse the brightness would rise exponentially with a time constant of about 0.3 millisec for the duration of the pulse and would then decay exponentially with a time constant of 1.2 millisec. Experiments with an equivalent circuit showed that these time constants are much longer than the RC constants of the cell. It is hypothesized that the long time constants are associated with the long lifetime of the excited state of the Mn^{2+} ions, with carrier entrapment processes, and with polarization effects. It was not possible to achieve a brightness exceeding 5 to 10 nit with excitation by pulses of the same sign, but brightnesses several orders of magnitude higher could be obtained by excitation with pulses of

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ACC NR: AP7004975

alternating sign. The brightness increased linearly with the pulse repetition rate for rates between 20 and 1000 Hz and was proportional to the 8-th to 10-th power of the pulse height for brightnesses below 20 nit. The dependence of the brightness on the pulse duration for fixed height and repetition rate was more complex. It was found that brightnesses of 10 to 20 nit could be achieved with 10 to 50 microsec pulses of heights below 30 V and repetition rates from 100 to 300 Hz. It is concluded that the investigated electroluminophors are suitable for use in sign indicators, matrix indicator screens, and other devices that do not require a duty factor higher than 0.001. Orig. art. has: 3 figures.

SUB CODE: 20 SUBM DATE: none ORIG. REF: 002 OTH REF: 001

Card 2/2

ANTONOV, A.Ye.; VLASENKO, N.B.

Distribution of phosphates and silica in the southern Baltic in 1957-1959. Trudy BaltNIRO no.7:70-77 '61. (MIRA 15:2)
(Baltic Sea--Phosphates) (Baltic Sea--Silica)

ACC NR: AT6027901 SOURCE CODE: UR/0368/66/005/001/0067/0072

AUTHOR: Vlasenko, N. A.; Zyn'o, S. A.

ORG: none

TITLE: Investigation of characteristics of low-voltage electro-luminescent ZnS-Mn films under pulsed excitation

SOURCE: Zhurnal prikladnoy spektroskopii, v. 5, no. 1, 1966, 67-72

TOPIC TAGS: zinc sulfide optic material, electroluminescence, light excitation, optic brightness

ABSTRACT: Inasmuch as in most practical applications electro-luminescent films are used under pulsed excitation conditions, the authors determine the brightness waves, the time constant of luminescence buildup and attenuation, and the dependence of the average brightness of low-voltage ZnS-Mn films on the duration of the voltage pulse, the frequency, amplitude, and polarity in the case of rectangular pulses. The ZnS.Mn film was produced by a method described earlier (Opt. i spektr. v. 8, 81, 1960) and placed between a transparent electrode (SnO_2 or In_2O_3) and an aluminum electrode, the latter being separated from the ZnS.Mn by an insulating SiO layer. The tests were made on unit cells ranging in area from 0.5 to 10^{-3} cm^2. A flash of brightness was observed when a unipolar pulse was first applied to the sample, or when the polarity of

 UDC: 535.376

the pulses was reversed. The average brightness of the electroluminescence was found to increase appreciably on going from unipolar exciting pulses to alternating pulses. The use of alternating pulses made it possible to obtain an average brightness not lower than 15 -- 20 nit at a pulse amplitude ≥ 30 V, pulse duration ≥ 20 μsec, and a repetition frequency > 200 cps. An equivalent circuit of the electro-luminescent cell is used to explain the kinetics of the electro-luminescence and the values of the equivalent-circuit parameters are evaluated. The electro-luminescence buildup time was approximately 4×10^{-4} sec, and the decay time was 1.2×10^{-3} sec. The values were much larger than the time constant of the equivalent circuit, from which it is deduced that the growth time of the electro-luminescence in the films is connected with the duration of the excited state of the Mn^{2+} ion, and not with the capture of the carriers. It is concluded that the phosphor ZnS.Mn can be successfully used in many electro-luminescent devices which do not require very large off-duty cycles (in different character-display matrix screens etc.). The authors thank V. I. Kislyuk and I. Yu. Shabliy for help with the experiment and Doctor of Physical-Mathematical Sciences M. P. Lisitsa for interest in the work and a discussion of the results. Orig. art. has: 4 figures and 4 formulas

SUB CODE: 20/ SUBM DATE: 18Feb65/ ORIG REF: 002/ OTH REF: 001

PALKIN, A.P.; KOROTKIKH, G.G.; VLASENKO, N.B.

Interaction in the systems: $CdCl_2$ - $ZnCl_2$ - Al and $CdCl_2$ - TlCl - Al. Zhur. neorg. khim. 5 no.3:637-641 Mr '60. (MIRA 14:6)
(Cadmium chloride)
(Zinc chloride)
(Aluminum)
(Thallium chloride)

VLASENKO, Nikolay Dmitriyevich; FISHMAN, Yakov Natanovich; SMELYANSKIY, V.A., redaktor; PEVZNER, V.I., tekhnicheskiy redaktor

[Mechanization of threshing operations] Mekhanizatsiia rabot na tokakh. Moskva, Gos. izd-vo selkhoz. lit-ry, 1956. 91 p. (MLRA 9:11)
(Threshing)

VLASENKO, N.D., inzh.; MAL'TSEV, Yu.I., inzh.

Pneumatic belt-type grain cleaning machine. Trakt.i sel'-khozmash. no.10:31-32 O '59. (MIRA 13:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii i elektrifikatsii sel'skogo khozyaystva.
(Grain--Cleaning)

VLASENKO, N. D.

4650. VLASENKO, N. D. i FISHCHMAN, Ya. N. Mekhanizatsiya poslevborochnoy obrabotki zerna v borisovskom zernosovkchoze Omskoy Oblasti. M., Izd.--vo M-va soukhozov SSSR, 1954, 44s. s. Ill. (54-58068) p 633.1:631.36(57.14)

SO: Letopis' Zhrunal' nykt Statey, Vol. 7, 1949

VLASENKO, N. I. (Kiyev)

Raising the qualifications of public health system organizers without discontinuance of work. Vrach. delo no.6:133-134 Je '62.

(PUBLIC HEALTH ADMINISTRATION)

STRUYEV, I.A.; VLASENKO, N.I. (Kiyev)

Toward better training for public health organizers. Vrach. delo 4:122-125 Ap '62. (MIRA 15:5)
(PUBLIC HEALTH ADMINISTRATION)

VLASENKO, N.K.

VLASENKO, N.K.; PANCHENKO, A.A.

In reference to A.K.Lyskii's article "Causes of priming of boiler water in the Shpanov Sugar Factory." Sakh.prom.31 no.9:51-52 S '57. (MIRA 10:12)

1. Ukrgiprosakhar.

(Feed water)

VLASENKO, N.M.

Role of herds in zooprophylaxis of malaria in cattle drives in the Baraba Lowland. Med.paraz. i paraz. bol. 26 no.3:336-339 My-Je '57. (MIRA 10:11)

1. Iz kafedry obshchey biologii Novosibirskogo meditsinskogo instituta.

(MALARIA, prevention and control,
in cattle breeding (Rus))
(CATTLE,
prev. of malaria in cattle breeding (Rus))

VLASENKO, N.M.

Degree of the development of endo- and exophilic standards of behavior of gono-active Anopheles maculipennis messeae females in the Baraba lowland. Med.paraz. i paraz.bol. 26 no.4:436-439 Jl-Ag '57. (MIRA 10:11)

1. Iz kafedry obshchey biologii Novosibirskogo meditsinskogo instituta (dir. instituta - prof. G.D.Salesskiy, zav. kafedroy N.M.Vlasenko).

(MOSQUITOES,
Anopheles maculipennis, role of behavior of females in eradication (Rus))

VLASENKO, N. M.

USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91106.

Author : Vlasenko, N. M.
Inst : Not given.
Title : The Part Played by Cattle Herds in Malarial Hygienics Where the Pasturage System of Livestock Raising is Used in the Barabinsk Lowlands.

Orig Pub: Med. parazitol. i parazitarn. bolezni, 1957, 26, No 3, 336-339.

Abstract: In the Barabinsk lowlands two methods of raising driven livestock are used. In the first method, the dairy herds graze about the steppes far from the field camps. These field camps are separated and at a considerable distance from one another; the crews are usually located near a source of

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USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91106.

Abstract: water supply, which becomes subsequently the breeding place for Anepheles larvae. Hungry gonoactive females assemble in the habitations of the workers where they attack human beings during the early evening and in the daytime, a long time before the herd is driven back home and the period of maximum mosquito activity is reached. After the herd is driven back for milking, the mosquitoes mainly attack the animals. Under these conditions the contact between human beings and mosquitoes becomes more frequent. The precipitation reaction shows that mosquitoes with human blood in their stomachs total about 21.5 to 31.3% and only in rare instances 7.5 to 9.8%. According to the second method the dairy herds, heifers and milk-fed calves graze on

Card 2/3

USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91106.

Abstract: adjacent pastures; the heifers are kept at night in covered sheds near the field camps. The dairy herd grazes day and night on the pasture at a distance of 3 to 5 kilometers from the field camp. The working crew quarters are located flush on the grounds of the general field camp. A greatly attenuated contact between humans and the Anopheles is then brought about by the mosquitoes being diverted by the cattle herds kept at night in the stalls. Under these conditions mosquitoes having human blood in their stomachs total about .3 to .6%. The effect of the correct organization of pastureage on the incidence of malaria is analyzed. -- N. Ya. Markovich.

Card 3/3

VLASENKO, N. M.

USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91093

Author : Vlasenko, N. M.
Inst : Not given.
Title : The Degree of Development of Endophilic and Exophilic Behavior in Gonoactive Females of Anopheles Maculipennis Messeae in the Barabinsk Lowlands.

Orig Pub: Med. parazitol. i parazitarn. bolezni, 1957, 26, No 4, 434-439 (res. Eng.)

Abstract: The degree of exophilia in Anopheles maculipennis masseae mosquitoes as well as the possibility of their contact with human beings were studied in localities where the livestock is driven out into pastures, in those sections of the Barabinsk lowlands which are well supplied with water and are

Card 1/4

USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91093

Abstract: thinly populated. The mosquito hunt was carried out on roads used by herds of cattle, on pasture lands and near the sites where the herds are stationed in the evening and at night, usually situated far from villages and at a distance of 1/2 to 2-1/2 kilometers from field stands. The main mass of mosquitoes collects during the daytime in places occupied by cattle and in the dwellings of workers. Only very few females were found in natural shelters near the herds. No Anopheles larvae were discovered in reservoirs near the cattle pastures. An analysis of the stomach contents of mosquitoes caught in barns, cattle sheds, huts and houses disclosed that the main mass of mosquitoes feeds on farm animals (68.36 to 99.5%), but that they use buildings

Card 2/4

USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91093

Abstract: as their shelters. A small exophilic population of Anopheles m. messeae was found in 1950 close to those places where cattle were stationed in holes near tree roots and in brushwood. The main mass of mosquitoes consisted of females with fresh blood. The average age of the exophilic population was younger than in females of the endophilic population. In the first instance older females amounted to 5%, while in the second instance they amounted to 21%, which is a proof that the natural shelters are less favorable and that the mortality of mosquitoes living in them is considerably higher. The temperature in natural shelters is lower than in buildings, especially at night when the temperature difference reaches 5 to 7°C. The author also

Card 3/4

USSR / Zooparasitology. Mites and Insects. Carriers of Disease Agents. G-4

Abs Jour: Ref Zhur-Biol., No 20, 1958, 91093

Abstract: noted an absence of exophilic population in other sections of the Barabinsk lowlands. -- N. Ya. Markovich

Card 4/4

VLASENKO, N. N.

Vlasenko, N. N.

"The ecological requirements for the epidemiology and prophylaxis of malaria in the Baraba lowlands." Acad Med Sci USSR. Department of Hygiene, Microbiology, and Epidemiology. Acad Med Sci USSR. Moscow, 1956 (Dissertation for the degree of Doctor in Biological Sciences)

Knizhnaya letopis'
No. 25, 1956. Moscow

VLASENKO, N.S., arkhitektor

Choosing a model and locating dwellings for construction workers at a district thermal electric station. Trudy Ural.politekh.inst. no.109:48-52 '61. (MIRA 14:7)
(Electric power plants) (Dwellings)

VLASENKO,N.V.

Longitudinal and torsional vibrations in drill-pipe columns. Nauch. zap. IMA L'viv.fil. AN URSR no.1:61-76 '53. (MLRA 8:11)
(Oil well drilling)

Vlasenko, M. V.

342. Gubenko, T. P., Lukin, V. I., Gordschevsky, V. T., and Vlasenko, M. V., Problems of automation of well drilling proces-

A description is given of a model for investigating processes of automatic control of the [illegible] of a column of boring tubes. The

VLASENKO, Nikolay Vasil'yevich, kand.tekhn.nauk, dotsent

Study of the performance of a slide contactor in transformer oil. Izv.vys.ucheb.zav.; elektromekh. 5 no.10:1195-1197 '62. (MIRA 15:11)

1. Kafedra elektricheskikh mashin L'vovskogo politekhnicheskogo instituta.

(Electric motors, Direct current)

VLASENKO, N.V.

112-3-5743

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p.99 (USSR)

AUTHOR: Vlasenko, N.V.

TITLE: Theoretical Principles in the Experimental Determination of Heat Transfer Coefficients in an Electric Machine (Teoreticheskiye osnovy k eksperimental'nomy opredeleniyu koeffitsiyentov teploperedachi v usloviyakh elektricheskoy mashiny)

PERIODICAL: Nauch. zap. L'vovsk. politekhn. in-ta, 1955, Nr 34, pp. 161-175.

ABSTRACT: The problem of experimental determination of average heat transfer coefficients in existing machines is stated, and a technique for computing overheating is proposed. The heat cycle is set up, and the values of specific thermal resistance are determined depending upon the machine geometry, heat emission coefficient and type of ventilation (axial or radial). The resulting specific thermal resistance is determined; the application of the results obtained are considered for thermal design of machines with a nonsymmetrical distribution of the heat flows along the axis of machines and for long machines

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112-3-5743

Theoretical Principles in the Experimental Determination (Cont.)

with sectionalized ventilation. The application of the proposed technique to experimental determination of the heat emission coefficient in a machine is discussed. A.I.M.

ASSOCIATION: L'vov Polytechnical Institute (L'vovsk. politekhn. in-t)

Card 2/2

BARDACHEVSKIY, V.T.; VELICHKO, Yu.T.; VLASENKO, N.V.; GUBENKO, T.P.; DRYAKHLOV, A.I.; KARANDEYEV, K.B.; KARNYUSHIN, L.V.; MAKSIMOVICH, N.G.; SOKOL'NITSKIY, G.Z.

M.G. Liukov. Izv. vys. ucheb. zav.; energ. no.5:127 My '58. (MIRA 11:8)

(Liukov, Mikhail Grigor'evich, 1915-1958)

L 38476-66 EWT(1)

ACC NR: AR6017225 SOURCE CODE: UR/0058/65/000/012/B011/B011

AUTHOR: Vlasenko, N. V.; Panteleyeva, N. L.; Senik, V. I.

TITLE: The potential on the axis of a conducting disk with a concentric hole, excluding the edge effect

SOURCE: Ref. zh. Fizika, Abs. 12B125

REF SOURCE: Tr. po teorii polya, vyp. 1, 1964, 55-58

TOPIC TAGS: disk, edge effect, charge distribution, electric potential, charge density

ABSTRACT: The problem under consideration is the potential of the axis of a conducting disk with a concentric hole excluding the function of the electric-charge distribution on its surface when the surface density of the electrical charge is assumed to be constant. [Based on authors' abstract] [AM]

SUB CODE: 20/ SUBM DATE: none

Card 1/1 pb

L 38477-66 EWT(1)
ACC NR: AR6017226 SOURCE CODE: UR/0058/65/000/012/B011/B011

AUTHOR: Vlasenko, N. V.; Senik, V. I.

TITLE: The potential on the axis of a conducting disk with a concentric hole, taking the edge effect into account

SOURCE: REf. zh. Fizika, Abs. 12B126

REF SOURCE: Tr. po teorii polya, vyp. 1, 1964, 59-63

TOPIC TAGS: conducting disk, edge effect, electric potential

ABSTRACT: The problem under consideration is the potential on the axis of a conducting disk with a concentric hole in consideration of the edge effect. [Based on authors' abstract] [AM]

SUB CODE: 20/ SUBM DATE: none

Card 1/1 pb

VLASENKO, O.I., dots.

Certain errors that students make in their mathematic studies and methods for their correction. Nauk. zap. ChDPI 11:349-357 '57.
(Mathematics—Study and teaching) (MIRA 11:5)

VLASENKO, O.I.; LEVCHENKO, G.V.; MAREK, B.A.; TEODOROVICH, O.K.

Defects of ceramic metal tungsten-nickel-copper contactors. Poroshk.met. 5 no.6:94-104 Je '65. (MIRA 18:8)

1. Institut problem materialovedeniya AN UkrSSR.

L 20253-66 EWP(k)/EWT(m)/EWP(e)/EWP(t) IJP(c) JD/HW/JG

ACC NR: AP5013252 SOURCE CODE: UR/0226/65/000/005/0058/0062

AUTHOR: Teodorovich, O. K.; Levchenko, G. V.; Vlasenko, O. L.

ORG: Institute of Problems of the Science of Materials, AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Effect of silicon in the molding and properties of tungsten-nickel-copper contacts

SOURCE: Poroshkovaya metallurgiya, no. 5, 1965, 58-62

TOPIC TAGS: silicon containing alloy, tungsten containing alloy, copper containing alloy, nickel containing alloy, electric conductivity, tensile strength, specific resistance, powder metal molding

ABSTRACT: It was found that small additions of silicon in copper (up to 1%) improve the process of impregnating tungsten-nickel-copper contacts, and eliminate waste due to pores and cavities caused by the reducing effect of silicon and increase in the fluidity of copper. The electric conductivity, hardness, contact resistance, and tensile strength of tungsten-nickel-copper compositions change slightly on introducing small additions of silicon into copper. This is best done by impregnating tungsten-nickel-copper blanks in previously silicated graphite molds. Orig. art. has: 6 figures. [Based on author's abstract.]

SUB CODE: 11/ SUBM DATE: 20Mar64/ ORIG REF: 003/ Powder Metallurgy 18

Card 1/1 PR

GRUSHKO, Yu.M.; DIKUN, P.P.; SHABAD, L.M.; RUKAVISHNIKOVA, T.I.; ZAK, L.M.; VLASENKO, O.M.

Comparative study of air contamination by a cancerogenic substance (3,4-benzopyrene) in Irkutsk andAngarsk [with summary in English]. Gig. i san. 23 no.4:7-10 Ap '58. (MIRA 11:6)

1. Iz kafedry obshchey gigiyeny Irkutskogo meditsinskogo instituta, laboratorii eksperimental'noy onkologii Instituta onkologii AMN SSSR, Irkutskoy oblastnoy sanitarno-epidemiologicheskoy stantsii i Irkutskogo energeticheskogo upravleniya.

(AIR POLLUTION, determ.
by 3,4 benzopyrone in sampling of snow flakes (Rus))
(BENZOPYRENES, determ.
3,4 benzopyrene in sampling of snow flakes in air pollution determ. (Rus))

VLASENKO, Petr Ignat'yevich; TEPLYAKOV, G.V., red.; TIMOSHEVSKAYA, A.A., tekhn. red.

[Lofty initiative] Krylatyi pochin. Donetsk, Donetskoe knizhnoe izd-vo, 1963. 49 p. (MIRA 16:12)

1. Sekretar' Chistyakovskogo gorodskogo komiteta Kommunisticheskoy partii Ukrainy (for Vlasenko).
(Donets Basin--Coal mines and mining--Technological innovations)

L 15647-63 EWP(k)/EWP(q)/EWT(m)/BDS AFFTC/ASD Pf-4 JD/HM

S/0286/63/000/002/0026/0027 63

ACCESSION NR: AP3000840

AUTHOR: Litvinshuk, M. D.; Vlasenko, P. I.; Nazarenko, O. K.; Timchenko, V. A.; Prosvirov, A. N.

TITLE: Installation for electron-beam welding of tubes with tube panels. Class H 05b; 21h, 30 sub 10, No. 152714 14

SOURCE: Byul. izobreteniy i tovarnykh znakov, no. 2, 1963, 26-27

TOPIC TAGS: electron-beam welding, automatic program control, welding

ABSTRACT: Installation for electron-beam welding of pipe with pipe panels, containing an electron-beam welding gun with magnetic deflection system, a rotating table for fastening and rotating the work piece during the welding process, and an automatic control system for sequential operation of individual mechanisms; its distinguishing feature is that in order to automate the welding process, the table is provided with two lead screws with a drive system for moving the article in two mutually-perpendicular directions when it comes time

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L 15647-63
ACCESSION NR: AP3000840

to weld the next tube, and the control system contains a program unit with relay elements for automatic control in accordance with a program recorded on a punched tape or some other program carrier. Orig. art. has: 1 figure (see Enclosure 1) /Abstractor's note: complete translation./

ASSOCIATION: none

SUBMITTED: 11 Sept 61 DATE ACQ: 28 May 63 ENCL: 01

SUB CODE: MD, ML NO REF SOV: 000 OTHER: 000

Card 2/3

VLASENKO P.V.

DATSENKO, M.F., dotsent, ispolnyayushchiy obyazannost' zaveduyushchego; GUZENKO, P.K., kandidat meditsinskikh nauk; VLASENKO, P.V., direktor.

Pathogenic therapy of trigeminal neuralgia. Stomatologiia no.3:30-36 '53. (MLRA 6:7)

1. Kafedra khirurgicheskoy stomatologii Khar'kovskogo meditsinskogo stomatologicheskogo instituta (for Datsenko and Guzenko). 2. Khar'kovskiy meditsinskiy stomatologicheskiy institut (for Vlasenko).
(Trigeminal nerve) (Neuralgia)

[redacted]

VLASENKO, P. V.

"The variability of diphtheroids in association with staphylocci." Min Higher Education Ukrainian SSR. Khar'kov Order of Labor Red Banner State U imeni A. M. Gor'kiy. Kharkov, 1956. (Dissertation for the Degree of Candidate in Biological Sciences).

SO: Knizhnaya letopis', No. 16, 1956

VLASENKO, P.V.

VLASENKO, P.V.

Pathogenic role of diphtheroids. Vrach.delo no.9:951-953 S '57.
(MLRA 10:9)

1. Kafedra biologii i kafedra mikrobiologii Khar'kovskogo meditsinskogo stomatologicheskogo instituta
(BACTERIA, PATHOGENIC)

F-4

USSR / Microbiology. Microbes Pathogenic for Man and Animals. Bacteria. Root Bacteria.

Abs Jour: Ref Zhur-Biol., 1958, No 17, 76809.

Author : Vlasenko, P. V.
Inst : Not given.
Title : New Pathogenic Varieties of Diphtheriods.

Orig Pub: Vrachebn. delo, 1957, No 10, 1043-1046.

Abstract: The changeability of 22 avirulent strains of diphtheroids (D) in association with 6 virulent strains of Staphylococcus albus and St. aureus were investigated in vitro. Of the 22 strains, 13 belonged to Corynebacterium hoffmani, and 9 were not identified with any of the species of D described. Associative cultivation of D and staphylococci (S) were conducted BPM with serum with pH 7.6 for 1-1/2-2 months at 37° without subculturing.

Chair of Biology & Chair of Microbiol.,
Khar'kov Medical Stomatology Inst.

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USSR / Microbiology. Microbes Pathogenic for Man and Animals. Bacteria. Root Bacteria. F-4

Abs Jour: Ref Zhur-Biol., 1958, No 17, 76809.

Abstract: As a result of combined growth with different strains of S, the strains C. hoffmani almost did not change, but all remaining strains of D sharply changed morphologically, tinctorially and culturally in the direction of identity with the diphtheria rods. Pigmentation of columns of D changed according to the pigmentation of the columns of S of the associate (induction). The antigenic structure of D, by changing, attained antigenic properties common with S. The changes of D appeared in a determined order, but the degree of stability depended on the length of the association. After the combined growth with S for 30-45 days, the properties attained by D were inherited in many generations kept in a pure culture for 8-10 months.

Card 2/3

USSR / Microbiology. Microbes Pathogenic for Man and Animals. Bacteria. Root Bacteria. F-4

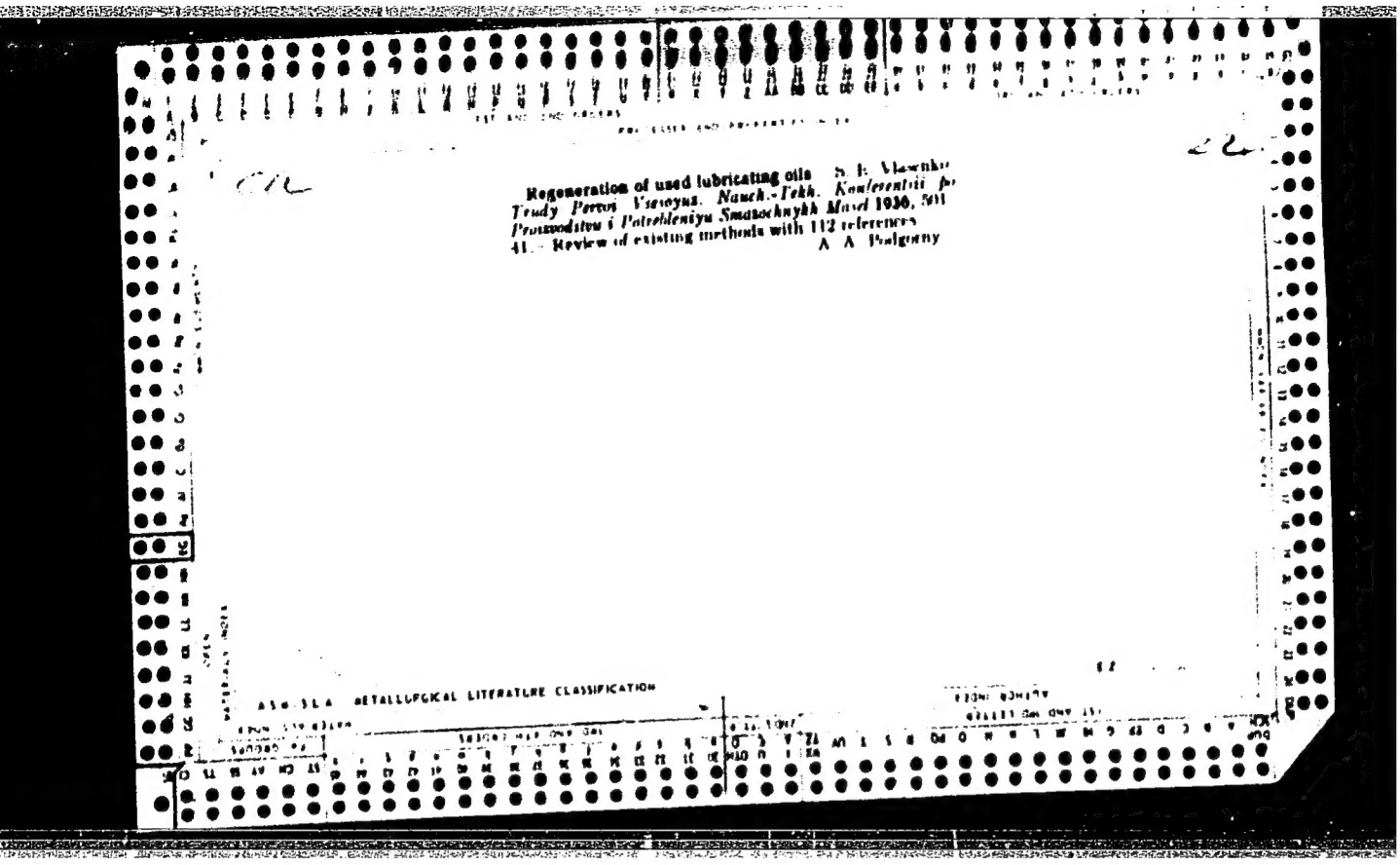
Abs Jour: Ref Zhur-Biol., 1958, No 17, 76809.

Abstract: With intracutaneous introduction in rabbits, 11 of the 12 changed D's caused local suppurative inflammation. -- M. Ya. Boyarskaya.

Card 3/3

SOLOMKA, Yakov Fedorovich; VLASENKO, S.K., inzh., retsenzent; PILIPENKO, Yu.P., inzh., red.; GORNOSTAYPOL'SKAYA, M.S., tekhn. red.

[Manufacture of bimetallic parts] Proizvodstvo dvukhsloinykh detalei. Moskva, Mashgiz, 1962. 116 p. (MIRA 15:4)
(Metalwork) (Laminated metals)



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S/739/60/001/000/015/015
E020/E185

27.1220

AUTHORS: Vlasenko, S.P., Candidate of Medical Sciences; Kheyfets, Yu.B., Junior Scientist; and Chil-Akopyan, L.A.

TITLE: The effect of ionizing radiation upon oxygen consumption and certain aspects of carbohydrate metabolism

SOURCE: Akademiya nauk Armyanskoy SSR. Sektor radiobiologii. Voprosy radiobiologii. v.1, 1960, 191-196

TEXT: An investigation was made of the effects of insulin and X-irradiation given singly or in combination, upon the oxygen consumption, blood-sugar level and glycogen content of the leucocytes in rats. Exposure to 600 r was followed by a fall in all these quantities, which attained minimum values after 1.5-3 h. A return to normal levels occurred after 24 hours. In animals given a single dose of insulin without irradiation the blood sugar and oxygen consumption fell similarly, but a rise in glycogen content of the leucocytes occurred after 1.5-3 hours and persisted for 24 hours. The combined action of insulin and irradiation did

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